

## Claims

1. A method for providing reliable transmission Quality of Service (QoS) of service in communication network, wherein, comprising:

5       A. Creating a QoS connection between bearer network resource managers in the communication network;

      B. Exchanging and negotiating the QoS information, which the communication network should provide during the data transmission procedure, among the bearer network resource managers through the said QoS connection;

10       C. According to the QoS information sent by the bearer network resource manager, the connection node connected to this bearer network resource manager providing corresponding resource.

2. The method according to claim 1, wherein, s said bearer network resource  
15       manager locates in bearer control layer of the multiservice network.

3. The method according to claim 1, wherein, said step A comprising steps for establishing the connection initially:

20       A1. Local bearer network resource manager that initiates the create connection procedure sending a establish connection request to peer bearer network resource manager;

      A2. peer bearer network resource manager responding to said creating connection request and creating the QoS-based connection.

25       4. The method according to claim 3, wherein, before step A2 further comprising:

      Peer bearer network resource manager judging whether identity of local bearer network resource manager is valid, if valid, executing step A2; otherwise, returning a message of unable to create the connection to local bearer network resource manager.

30       5. The method according to claim 3, wherein, the information carried in the creating connection request comprising: identification and authentication information of the bearer network resource manager initiating the creating connection request.

6. The method according to claim 3, wherein, after the said step A2 further comprising:

A3. Local bearer network resource manager periodically sending handshake message to peer bearer network resource manager, and determining the connection status according to the handshake response returned by peer bearer network resource manager.

7. The method according to claim 6, wherein, the said step A3 comprising:

A31. Creating local Keep Active (KA) timer at local bearer network resource manager, and creating peer Keep Active (KA) time at peer bearer network resource manager;

A32. When local KA timer is timeout, local bearer network resource manager adding 1 to timeout times of local KA timer and sending a handshake message to peer bearer network resource manager;

A33. After receiving the handshake message, peer bearer network resource manager restarting peer KA timer and returning a handshake response to local bearer network resource manager;

A34. Local bearer network resource manager determining the created QoS connection status according to timeout times of the local KA timer, peer bearer network resource manager determining the QoS connection status according to whether peer KA timer is timeout.

8. The method according to claim 6, wherein, the information carried in the said handshake message including:

connection ID and connection resource state information.

9. The method according to claim 1 or 3, wherein, the said step B comprising:

Local bearer network resource manager interacting with peer bearer network resource manager through a plurality of intermediate bearer network resource managers, and said intermediate bearer network resource manager only taking charge in message transfer.

10. The method according to claim 1 or 3, wherein, after the said step B further comprising:

The bearer network resource manager that finally receives said QoS information managing and controlling resources of the connection node under its control according to the received QoS information.

5 11. The method according to claim 1, wherein, the said step B comprising:

B1. Local bearer network resource manager sending QoS resource control message that carries the QoS information to the connection nodes under its control as well as to peer bearer network resource manager;

10 B2. Peer bearer network resource manager sending QoS resource control policy to said connection node according to the received QoS resource control message;

B3. After receiving said QoS resource control policy, the connection node returning a response of QoS resource control policy to the said peer bearer network resource manager;

15 B4. Peer bearer network resource manager returning a response of the QoS resource control message to local bearer network resource manager.

12. The method according to claim 11, wherein, the said QoS resource control message in step B1 being:

20 QoS resource request information, which carries information like connection identification, stream information, QoS parameters and stream descriptor.

13. The method according to claim 11, wherein, the said QoS resource control message in step B1 being:

25 QoS resource release request, which carries information like connection identifier and reason code.

14. The method according to claim 11, wherein, said QoS resource control message in step B1 being:

30 QoS resource modify request, which carries information like connection identifier and the modified parameter information corresponding to the QoS resource connection.

15. The method according to claim 11, wherein, said QoS resource control message in step B1 being a connection status inquiry message, and said step B4 comprising:

After receiving the response from the connection node, peer bearer network resource manager checking resource consistency of the created QoS connection; and returning a response of the connection status inquiry message to local bearer network resource manager according to the check result.

16. The method according to claim 15, wherein, the information carried in said response of connection status inquiry message including:

Connection identifier, or stream information, or QoS parameters, or stream descriptor, or label stack, or path maximum transmission unit, or bearer network resource manager stack, or any combination of the above elements.

17. The method according to claim 5 or claim 8 or claim 12 or claim 13 or claim 14 or claim 16, wherein, said message further carrying information like: data consistency information.

18. The method according to claim 17, wherein, said data consistency information comprising: parameter global path maximum transmission unit, global label stack depth, intra-domain label stack depth and stream description.

19. The method according to claim 11, wherein, said connection node being a router.

20. The method according to claim 1, wherein, said bearer network resource manager being a bandwidth broker, or being a call agent, or being a connection manager.